

**REMARKS**

**I. Status of Claims**

Claims 14-26 are currently pending. No claims are amended herein.

**II. Section 103 Rejection**

A. The Examiner rejects claims 14-19 and 21-26 under 35 U.S.C. 103(a) as being unpatentable over WO 99/33070 to Belli et al. ("Belli") in view of WO 01/38060 to Harlin et al. ("Harlin") for the reasons disclosed at pages 2-4 of the Office Action. Applicants respectfully traverse this rejection for at least the reasons presented below.

With respect to obviousness, several basic factual inquiries must be made in order to determine the obviousness or non-obviousness of claims under 35 U.S.C. § 103. These factual inquiries, set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 U.S.P.Q. 459, 467 (1966), require the Examiner to:

- (1) Determine the scope and content of the prior art;
- (2) Ascertain the differences between the prior art and the claims in issue;
- (3) Resolve the level of ordinary skill in the pertinent art; and
- (4) Evaluate evidence of secondary considerations.

The obviousness or nonobviousness of the claimed invention is then evaluated in view of the results of these inquiries. *Graham*, 383 U.S. at 17-18, 148 U.S.P.Q. at 467; *see also KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1730, 82 U.S.P.Q.2d 1385, 1388 (2007).

Indeed, to establish a *prima facie* case of obviousness, the Examiner must:

make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search and evaluate

the "subject matter as a whole" of the invention. The tendency to resort to "hindsight" based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

M.P.E.P. § 2142. "The key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious."

*Id.* It is important to note, moreover, that the prior art references relied upon in a rejection "must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention," when such reasons are articulated by the Examiner. M.P.E.P. § 2141.03(VI) (emphasis in original); *see also Graham*, 383 U.S. at 17, 148 U.S.P.Q. at 467.

Here, the Examiner has not established a *prima facie* case of obviousness because the claimed invention as a whole would not have been obvious in view of Belli and Harlin, when considered as a whole. In particular, even if there were a reasonable expectation of success to the proposed combination of teachings of Belli and Harlin (and Applicants do not agree there is), one skilled in the art would not recognize that combination resulted in "said expanding and cross-linking steps c) and d) being carried out by heating said coating layer made of expandable and cross-linkable polymeric material at atmospheric pressure by means of a heating fluid, as required by all of the claims."

1. **"said expanding . . . step[ ] c) . . . being carried out by heating said coating layer made of expandable and cross-linkable polymeric material at atmospheric pressure by means of a heating fluid."**

The Examiner notes that Belli teaches a cable made "by an extrusion process (pg. 11, lines 22-30), where the expansion process is carried out (pg. 12, lines 6-20)."

Office Action at 3. The Examiner then alleges that Belli teaches that "[t]he cross-linking and expanding steps of the coating are carried out under heat (pg. 13, lines 11), by a heating fluid in the extruder (pg. 12, lines 26-31)." *Id.* The Examiner acknowledges that "Belli fails to explicitly teach operating the expansion and cross-linking steps at atmospheric pressure. . . ." *Id.* at 4. Based on these teachings, the Examiner concludes that "[o]ne would have had motivation to make such a combination because operation at a relatively lower pressure will allow expensive pressure vessels, difficulties associated with starting and stopping overpressure processes, and additional safety concerns to be avoided (pg. 2, lines 7-20)." *Id.* The Examiner's arguments are insufficient to establish a *prima facie* case of obviousness.

As an initial point, the Examiner cites no evidence and offers no argument that one skilled in the art would have known how to make a cable, wherein the process comprises expanding the expandable and cross-linkable polymeric material **at atmospheric pressure** by means of a heating fluid. The mere fact that they would be motivated to work at atmospheric pressure does not mean that one would have known how to do so.

Second, Belli does not teach "expanding . . . step[ 1 c] . . . being carried out by heating said coating layer made of expandable and cross-linkable polymeric material . . . ." As the Examiner admits, Belli teaches expanding while extruding. *See* Office Action at 3.

Third, Belli does not teach "expanding . . . being carried out by heating said coating layer . . . by means of a **heating fluid**." While Belli does teach expanding the composition in the extruder via heat; nothing in Belli suggests this occurs due to the application of a heating fluid onto the composition. The Examiner's citation to page 13,

line 11 and page 12, lines 26-31 do not suggest otherwise. Page 13, line 11 merely concerns crosslinking and not extrusion and does not suggest that the heat is due to the application of a heating fluid to the composition. Page 12, lines 26-31 merely discloses that high pressure gasses may be added in the extruder. As explained at lines 10-12, Belli teaches the use of high pressure gas is to physically expand the composition, i.e., form bubbles. Nothing therein suggests expansion due to heat from the application of a heating fluid onto the composition. Applicants have identified no teachings in Harlin wherein the polymer composition is expanded by means of a heating fluid to correct this deficiency in Belli.

For at least these reasons, Applicants respectfully submit that the rejection is improper and should be withdrawn.

2. **"said . . . cross-linking step[ ] . . . d) being carried out by heating said coating layer made of expandable and cross-linkable polymeric material at atmospheric pressure by means of a heating fluid."**

As noted above, the Examiner alleges that Belli teaches that "[t]he cross-linking and expanding steps of the coating are carried out under heat (pg. 13, lines 11), by a heating fluid in the extruder (pg. 12, lines 26-31)." Office Action at 3. The Examiner also acknowledges that "Belli fails to explicitly teach operating the expansion and cross-linking steps at atmospheric pressure . . . ." *Id.* at 4. The Examiner then notes that "Harlin teaches the method of cross-linking a layer by curing/heating after extrusion under normal atmospheric pressure." *Id.* (citing Harlin at page 2, lines 13-16). The Examiner's arguments are insufficient to establish a *prima facie* case of obviousness.

Neither Belli nor Harlin teach or suggest "cross-linking . . . being carried out by heating said coating layer . . . by means of a **heating fluid**." The Examiner cites to

page 13 of Belli; however, Belli says nothing about crosslinking by heating the polymer material using a **heating fluid**. Indeed, Belli merely mentions that crosslinking can be carried out by heating in the presence of a **radical initiator**. See Belli, page 13, lines 8-13. Harlin does not cure the deficiency of Belli. Harlin teaches that its invention is crosslinked by heating a peroxide initiator in a polymer mass by means of **infrared radiation**. See Harlin, Abstract, page 4, line 15 to page 5, line 2. Harlin's invention does not rely upon the application of a heating fluid, whether at atmospheric pressure or otherwise. In fact, Harlin expressly teaches away from heating fluids, such as steam, salt melts, and silane oils. See *id.* at pages 1-3.

Moreover, neither Belli nor Harlin teach or suggest "cross-linking . . . being carried out by heating said **coating layer** . . . by means of a heating fluid." As noted above, Harlin explains that its invention is crosslinked by "heating **only** the **peroxide**" in a polymer mass by means of **infrared radiation**. See Harlin, Abstract, page 4, line 15 to page 5, line 2 (emphasis added). Harlin explains that its invention was designed to avoid disadvantages associated with heating "the entire polymer material" of the coating layer. See, e.g., *id.* at page 4, lines 11-27. Thus, not only does Harlin not teach heating said coating layer, Harlin expressly teaches away from heating "the entire polymer material" of said coating layer.

For this additional reason, Applicants respectfully submit that the rejection is improper and should be withdrawn.

B. The Examiner rejects claim 20 under 35 U.S.C. 103(a) as being unpatentable over Belli in view of Harlin, as applied to the claims above, further in view of U.S. Patent Application Publication No. 2001/0002075 A1 to Chaudhary et al.

("Chaudhary") for the reasons disclosed at pages 4-5 of the Office Action. Applicants respectfully traverse this rejection for the reasons presented below.

As discussed above, Belli and Harlin, whether alone or in combination, fail to teach or suggest conducting either step c) or step d), as presently claimed. Since claim 20 depends from claim 19, which depends from claim 14, the Examiner's rejection of claim 20 suffers the same set of deficiencies, which Chaudhary fails to cure. Accordingly, Applicants respectfully submit that this rejection is improper and should be withdrawn.

### **III. Conclusion**

In view of the foregoing remarks, Applicants respectfully request reconsideration of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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